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HYDROCARBON PROCESSING & PETROLEUM REFINER
Is Published By
GULF PUBLISHING COMPANY

EXECUTIVE OFFICES: 3301 ALLEN PARKWAY, HOUSTON
CABLE ADDRESS, GULFPUBCO, HOUSTON
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HYDROCARBON PROCESSING & PETROLEUM REFINER and The HYDROCARBON PROCESSING CATALOG for the hydrocarbon processing industry (HPI).

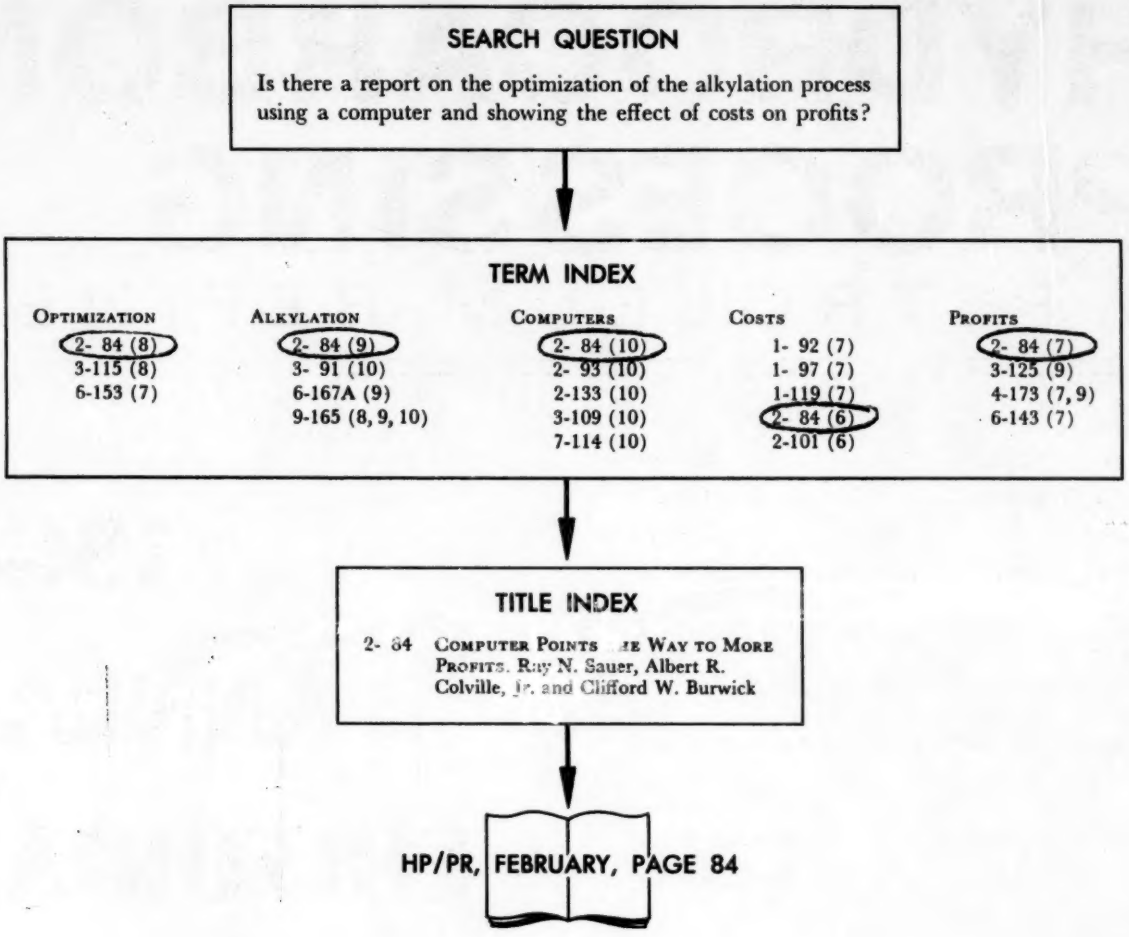
WORLD OIL (formerly The Oil Weekly) and The COMPOSITE CATALOG for the drilling-producing industry.

PIPE LINE INDUSTRY and The PIPE LINE CATALOG for the oil and gas pipe line industry.

1964 ANNUAL EDITORIAL INDEX

Volume 43

Index Reprints can be obtained by writing the librarian,
HYDROCARBON PROCESSING & Petroleum Refiner, Box 2608, Houston, Texas 77001



How to Search the Annual Index

THIS IS THE SECOND YEAR HP/PR has used the new system of concept coordination[1] in its annual index. Here are some of the advantages of this special form of indexing:

Short Cut Method. Although the index was devised to handle complicated retrieval problems, it also can be used in the ordinary way. For example, if you are seeking information about optimization, you look for OPTIMIZATION in the Term Index. Following the term, OPTIMIZATION, is a list of article numbers telling where to find reports on this subject.

Code Numbers. The article number usually is in three parts: The first part refers to the month of publication in HP/PR. The second part refers to the page of that issue. The other part of the code number will be discussed later. The first two parts are all you need to find articles about one subject. For example, the number 2-84 (8) following the term, OPTIMIZATION, refers to a report appearing in Issue No. 2 (February), page 84.

Roles Help Retrieval. The number in parentheses at the end of each article number tell how a term is used in a report. For a definition of role numbers, see the accompanying box. In our optimization example, the article number, 2-84 (8), shows the article considers optimization in role 8. Role 8 is used for primary topics of discussion. Thus, optimization is given primary consideration in the report of February HP/PR, page 84.

COORDINATE INDEXING

The greatest value of this form of indexing is in its use for concept coordination. Two or more concepts (terms) can be coordinated to narrow the search for more perti-

nent reports. Such a search scheme requires that a search question be formulated which is specific to the search problem.[2]

For example, you may be searching for an article which discusses the use of computers to optimize alkylation processes. Furthermore, you may want only those articles which discuss the effect of alkylation costs on profits. The steps in searching for an article of this nature are shown in Figure 1.

Steps in Searching. First, make a statement of the search question. Second, search for each of the keywords in the term index. Identical article numbers (excluding parenthetical numbers) following these terms refer to articles combining all of these concepts. Portions of the term index are reproduced in Figure 1 to show how this works.

False Coordination. A comparison of the parenthetical numbers discloses whether the terms are related in the way you desire. In our search question, the primary topic (Role 8) is OPTIMIZATION, the passive receiver of this action (Role 9) is ALKYLATION, and the means of accomplishing the objective (Role 10) is by COMPUTERS. Furthermore, the report must discuss the effect of one variable (Role 6), COSTS, upon another variable (Role 7), PROFITS. An examination of the term index shows the article number 2-84 contains the proper role identification for each term.

Links Help, Too. Now we can discuss the letters which appear in some of the article numbers. These letters are used whenever an article discusses several unrelated concepts. If our example report about the optimization of alkylation also discussed the cause and effect between costs and profits for making computers—rather than the cause and effect of costs and profits during alkylation—then we would see 2-84A following OPTIMIZATION and ALKYLATION, but we would see 2-84B following the terms, COSTS, PROFITS and COMPUTERS. The suffixes A and B show terms which are coordinated separately in the report.

Other Search Terms. Usually, more than one term can be used to signify a single concept. This redundancy is included in the index, too. The optimization report, for example, is also indexed following the terms: OPERATIONS, PROCESSES, REACTIONS, EARNINGS, PROGRAMING, RELATIONSHIPS, etc.

The Thesaurus[3] of the American Institute of Chemical Engineers is used to make our selection of indexing terms. The Thesaurus gives a list of preferred terms. This explains why a particular term may be missing from the index. For example, the Thesaurus suggests DISTILLATION be used instead of FRACTIONATION.

Rules for Indexing. There also are ground rules for selecting the role numbers as well as indexing terms. The reader is referred to a report[4] by the Engineers Joint Council for a discussion of the proper choice whenever several alternate role selections seem possible.

LITERATURE CITED

[1] Morse, Rollin and Wall, Eugene, "New Information Retrieval Standards," PETROLEUM REFINER, 40, No. 5, 263 (1961).
[2] Liston, David M. and Halliday, T. Carter, "How to Search the New Annual Index," HYDROCARBON PROCESSING & Petroleum Refiner 42, No. 12, 142 (1963).
[3] "Chemical Engineering Thesaurus," American Institute of Chemical Engineers, 345 E. 47th St., New York, N.Y. 10017.
[4] "Operating Manual for use in Abstracting and Coordinate Indexing," Information Systems Research Division, Battelle Memorial Institute, 505 King Ave., Columbus, Ohio.

Meaning of Roles in the EJC System

Role 1. Input; raw material; material of construction; reactant; base metal (for alloys); components to be combined; constituents to be combined; ingredients to be combined; material to be shaped; material to be formed; ore to be refined; subassemblies to be assembled; energy input (only in an energy conversion); data and types of data (only when inputs to mathematical processings); a material being corroded

Role 2. Output; product, byproduct, co-product; outcome, resultant; intermediate product; alloy produced; resulting material; resulting mixture or formulation; material manufactured; mixture manufactured; device shaped or formed; metal or substance refined; device, equipment, or apparatus made, assembled, built, fabricated, constructed, created; energy output (only in an energy conversion); data and types of data (only as mathematical processing outputs)

Role 3. Undesirable component; waste; scrap; rejects (manufactured devices); contaminant; impurity, pollutant, adulterant, or poison in inputs, environments, and materials passively receiving actions; undesirable material present; unnecessary material present; undesirable product, byproduct, co-product

Role 4. Indicated, possible, intended present or later uses or applications. The use or application to which the term has been, is now, or will later be put. To be used as, in, on, for, or with; for use as, in, on, for, or with; used as, in, on, for, or with; for later use as, in, on, for, or with

Role 5. Environment; medium; atmosphere; solvent; carrier (material); support (in a process or operation); vehicle (material); host; absorbent, adsorbent

Role 6. Cause; independent or controlled variable; influencing factor; "X" as a factor affecting or influencing "Y"; the "X" in "Y" is a function of "X"

Role 7. Effect; dependent variable; influenced factor; "Y" as a factor affected or influenced by "X"; the "Y" in "Y is a function of "X"

Role 8. The primary topic of consideration; the principal subject of discussion; the subject reported; the major topic under discussion

Role 9. Passively receiving an operation or process with no change in identity, composition, configuration, molecular structure, physical state, or physical form; possession such as when preceded by the preposition of, in, or on meaning possession; location such as when preceded by the prepositions in, on, at, to, or from meaning location; used with months and years when they locate information (not bibliographic data) on a time continuum

Role 10. Means to accomplish the primary topic of consideration or other objective

Role 0. Bibliographic data, personal names of authors, corporate authors and sources, types of documents, dates of publication, names of journals and other publications, other source-identifying data, and adjectives

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